

**Agenda – Standing Policy Committee on Finance – November 27, 2018**

**REPORTS**

**Item No. 5                    Biosolids – Alternative Disposal Delivery and Management System**

**WINNIPEG PUBLIC SERVICE RECOMMENDATION:**

That the financial status of the Biosolids – Alternative Disposal Delivery and Management System, as contained in this report, be received as information.

# ADMINISTRATIVE REPORT

**Title: Biosolids – Alternative Disposal Delivery and Management System,  
Project ID: 203110004B,  
Quarterly Project Status Report No. 11  
For the Period Ended May 31, 2018**

**Critical Path: Standing Policy Committee on Finance**

## AUTHORIZATION

Author	Department Head	CFO	CAO
G.K Patton, P. Eng., Manager of Engineering Services	T. W. Shanks, M. Eng., P. Eng., Acting Director, Water and Waste Department	M. Ruta	D. McNeil

## EXECUTIVE SUMMARY

Project On Schedule: Yes  No

Project On Adopted Budget: Yes  No

Percent of Schedule Complete:

Percent of Adopted Budget Spent:

The Biosolids – Alternative Disposal Delivery and Management System is currently on schedule and within budget.

An environment act licence application was submitted to Manitoba Sustainable Development in January 2018 to apply biosolids to farmland. This project has now transitioned to Wastewater Services Division and is funded by the current operating budget.

Manitoba Sustainable Development granted permission to temporarily continue operating the pilot biosolids compost facility beyond the May 2018 planned completion date while the compost report is being written, submitted to Manitoba Sustainable Development, and reviewed. In 2019, pending the recommendation of the compost report, this project is proposed to transition to the Solid Waste Division and will no longer be funded by the Biosolids – Alternative Disposal Delivery and Management System capital budget. The compost report is anticipated to be submitted to Manitoba Sustainable Development by October 2018. The compost report is expected to recommend that the composting of biosolids continue as an operational program funded by the operating budget.

In the 2018 capital budget the funds for the Second Stage Dewatering at the South End Sewage Treatment Plant (SEWPCC) project were realigned from 2018 to 2022 and escalated for inflation. In the proposed 2019 capital budget the Second Stage Dewatering project is a new project and is no longer associated with the Biosolids – Alternative Disposal Delivery and Management System.

The Advisory Committee has reviewed this report and recommends that the report be sent to the Standing Policy Committee on Finance.

## **RECOMMENDATIONS**

That the financial status of the Biosolids – Alternative Disposal Delivery and Management System, as contained in this report, be received as information.

## **REASON FOR THE REPORT**

The Asset Management Administrative Standard FM-004 requires all projects with a total estimated cost of \$22 million (2018) or more report quarterly to the Standing Policy Committee on Finance. This threshold is adjusted annually for construction inflation as part of the annual Capital Budget approval. The Standing Policy Committee on Finance may also request reporting on any capital project.

## **IMPLICATIONS OF THE RECOMMENDATIONS**

No implications.

## **HISTORY/DISCUSSION**

See Appendix C – Key Project Events (History)

### **Design Phase** (Update from last report)

The design for the SEWPCC Second Stage Dewatering Project has been realigned from 2018 to 2022 to reflect the latest schedule for the NEWPCC Upgrade.

In the 2019 proposed capital budget the SEWPCC Second Stage Dewatering Project is funded as a separate account and is no longer under the Biosolids – Alternative Disposal Delivery and Management System Account.

### **Piloting and Implementation Phase**

#### **Biosolids Composting Pilot**

The pilot ended in May 2018. Manitoba Sustainable Development has given permission to continue operating the facility until a summary composting report is finalized and submitted for their review. The composting report is due to Manitoba Sustainable Development by October 1, 2018.

### **153-2012 RFP for Professional Consulting Services for a Leaf and Yard Waste Composting Facility and a Pilot Biosolids Composting Facility at BRRMF**

- Design contract for the pilot biosolids composting facility.
- The values in Table 1 represent the portion of contract funded from the Biosolids – Alternative Disposal Delivery and Management System Account.
- The design and construction is complete. The remaining funds were for professional advice regarding compost operations for the duration of the pilot.
- The compost pilot has ended and contract closeout procedures have been initiated.

### **839-2012 Construction of the Brady Road Resource Management Facility Pilot Biosolids Composting Facility**

- Contract for the construction of the pilot biosolids composting facility.
- The values in Table 1 represent the portion of contract funded from the Biosolids – Alternative Disposal Delivery and Management System Account.
- Construction is complete.
- Total acceptance is expected in Fall 2018

### **473-2015 Laboratory testing for biosolids compost**

- Contract to test biosolids compost generated from the pilot according to the Canadian Council of Ministers for the Environment (CCME) Guidelines for Compost Quality.
- This contract is complete.
  - Environmental testing will be conducted through Solid Waste contracts. Costs associated with biosolids testing will be charged back to the Biosolids – Alternative Disposal Delivery and Management System until December 31, 2018, after which they will become operating costs.

### **619-2016 Biosolids Land Application**

- Contract for developing a land application program so that biosolids can be applied to farmland as fertilizer.
- The values in Table 1 represent the portion of contract funded from the Biosolids – Alternative Disposal Delivery and Management System Account.
- The application for a new environment act licence, which will allow for land application of biosolids, was submitted in January 2018.

- A 'notice-of-alteration' was issued by Manitoba Sustainable Development, allowing the City to land apply biosolids in 2018 while the licence application is reviewed. Funds for the land application program will be paid from an operating account.
- The remaining funds in this contract are to complete the licence application process. No other contracts or expenditures are expected for this program from the Biosolids – Alternative Disposal Delivery and Management System account.

Table 1 – Contracts

Contracts							
Bid Opportunity #	Company Name	Description	Original Contract Award Value (GST & MRST extra as applicable)	Total Approved Over-Expenditures (Over-Expenditure amount only)	Date of Award	Date of Total Completion	Estimated % Complete
153-2012	CH2M	RFP for Professional Consulting Services for a Leaf and Yard Waste Composting Facility and a Pilot Biosolids Composting Facility at BRRMF	\$ 445,800.00	32,981.00	24-May-12	-	98%
839-2012	Maple Leaf Construction (formerly Mulder Construction)	Construction of the Brady Road Resource Management Facility Pilot Biosolids Composting Facility	6,217,809.51	366,959.49	1-May-13	-	99%
89-2014	AECOM	Professional Consulting Services for RFP Development and Recommendation for a Struvite Vendor	79,840.00	-	4-Mar-14	29-Mar-16	100%
92-2014	Rakowski Cartage	Supply of Woodchips	367,200.00	-	2-Jul-14	1-Jul-15	100%
92-2014 Ext 1	Rakowski Cartage	Supply of Woodchips	367,200.00	-	2-Jul-15	1-Jul-16	100%
92-2014 Ext 2	Rakowski Cartage	Supply of Woodchips	367,200.00	-	2-Jul-16	1-Jul-17	100%
473-2015	A & L Canada Laboratories	Laboratory testing for biosolids compost	23,730.00	-	1-May-15	-	100%
619-2016	WSP Canada Group Limited	Land applying biosolids as a fertilizer to farmland	221,863.00	67,665.00	14-Dec-16	-	97%
<b>Total</b>			<b>\$ 8,090,642.51</b>	<b>\$ 467,605</b>			

**Upcoming Procurements:**

Description	Anticipated Award Date
Compost facility block wall rearrangement	Q3 2018
Compost facility wall reinforcement	Q3 2018

**Schedule** (Update from last report)

The land application licence submission was submitted in January 2018 and is being reviewed by Manitoba Sustainable Development.

The funds associated with the Second Stage Dewatering at the South End Sewage Treatment Plant (SEWPCC) project have been realigned from 2018 to 2022 to reflect updated timelines for the North End Sewage Treatment Plant Upgrade. In the proposed 2019 capital budget this work will be completed as a new project.

Table 2 – Milestones

Milestones					
	Deliverable	Original Targeted Completion Date	Revised Targeted Completion Date	Actual Completion Date	Estimated % Complete
1	Biosolids Master Plan submitted to MB Sustainable Development	3Q 2014		3Q 2014	100%
2	Biosolids Master Plan approved by MB Sustainable Development	4Q 2014		2Q 2016	100%
3	Compost Pilot	2Q 2017	2Q 2018	2Q 2018	100%
4	Land Application Public Engagement	3Q 2017		3Q 2017	100%
5	Land Application Licence Submission	4Q 2017	1Q 2018	1Q 2018	100%
6	Land Application Licence Approval	2Q 2018	4Q 2018		97%
7	Land Application Piloting Phase	3Q 2017		4Q 2017	100%
8	Land Application Transitions to Operations	2Q 2018		2Q 2018	100%
9	Compost Pilot Final Report and Recommendations	3Q 2018			50%
10	Compost Pilot modifications for long term operation	4Q 2018			0%

**Risk** (Update from last report)

The City has submitted an environment act licence application to land apply biosolids to farmland. Manitoba Sustainable Development did not approve the application by May 2018 but did issue a 'notice-of-alteration' to allow for land application during the 2018 season.

Table 3 – Significant Risks and Mitigations Strategies

<b>Significant Risks and Mitigation Strategies</b>	
<b>Risk Statement and Explanation</b>	<b>Risk Mitigation Management Plan</b>
<b>New:</b> None	
<b>Ongoing:</b>	
Field storage of biosolids: The City and contractor completed piloting options for field stockpiling of biosolids, including odour mitigation. There may be public concern regarding odour.	Odour mitigation options have been evaluated and piloted. Representatives from the rural municipalities and Manitoba Sustainable Development were invited to participate in odour assessments and give advice. The successful field storage option must be approved by Manitoba Sustainable Development before it is implemented.
The phases of the Biosolids Master Plan are linked to other large infrastructure projects, such as the North End Sewage Treatment Plant upgrade and the South End Sewage Treatment Plant upgrade. Delays in their schedule may impact the Biosolids Master Plan implementation.	The Biosolids Master Plan is being implemented in phases for flexibility and adaptability. There is regular coordination and communication between project managers. Manitoba Sustainable Development will be notified if there are impacts to the implementation schedule.
There may be high public interest in biosolids, their products, and their disposal options.	A public engagement program was implemented as part of the Biosolids Master Plan development. Components of the Biosolids Master Plan (e.g. land application) will have public engagement as part of their scope of work for communication and feedback.
<b>Mitigated:</b> None	

**Financial** (Update from last report)

For further information, refer to Appendix B – Financial Forecast

The project is on budget. Funds associated with the second stage dewatering project will no longer be required in the Biosolids – Alternative Disposal Delivery and Management System.

**Funding** (Update from last report)

No changes from last report.

Table 4 – Project Funding Forecast and Receivable

<b>Funding Forecast and Receivable</b>			
<b>Funding Source</b>	<b>Adopted Budget<sup>1</sup> (in millions)</b>	<b>Amended Budget<sup>2</sup> (in millions)</b>	<b>Committed (in millions)</b>
<b>Class of Estimate</b>	<b>Class 5</b>	<b>Class 4</b>	
<b>City of Winnipeg</b>	<b>65.2</b>	<b>16.9</b>	<b>16.9</b>
Retained Earnings	8.3	8.3	8.3
External Debt	36.4	-	-
Environmental Projects Reserve	20.5	8.6	8.6
	-	-	-
<b>Total</b>	<b>\$ 65.2</b>	<b>\$ 16.9</b>	<b>\$ 16.9</b>

<sup>1</sup> Components of the original budget were consolidated into the NEWPCC Nutrient Removal Upgrade Project resulting in a budget reduction.

<sup>2</sup> Report is based on the amended budget as the budget has not yet been refined to a class 3 estimate.

**Property Acquisition** (Update from last report)

N/A

**Stakeholder Engagements/Communications** (Update from last report)

The City intends to establish an advisory committee for the land application program, which will include representatives from the City, Manitoba Sustainable Development, and participating rural municipalities.

**Subsequent Events after Report Period End Date**

The City intends to land apply biosolids in accordance with Manitoba Sustainable Development’s ‘notice-of-alteration’ in the May – November 2018 application season. The pilot compost report will be submitted by October 2018 to Manitoba Sustainable Development for their consideration. The report is expected to recommend composting biosolids in the future, to meet soil requirements for the City’s landfills.

Some construction work is anticipated to modify the pilot facility for long term operation. The total estimate for the work is \$250,000.



<b>FINANCIAL IMPACT</b>
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**Financial Impact Statement**

**Date:** [October 4, 2018](#)

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**Project Name:**

**Biosolids – Alternative Disposal Delivery and Management System,**

**Project ID: 203110004B,**

**Quarterly Project Status Report No. 11**

**For the Period Ended May 31, 2018**

**COMMENTS:**

As this report is submitted for informational purposes only, there is no financial impact associated with this recommendation.

*"Original signed by L. Szkwerek, CPA, CGA"*

Lucy Szkwerek, CPA, CGA

Manager of Finance and Administration

## CONSULTATION

This Report has been prepared in consultation with:

N/A

## OURWINNIPEG POLICY ALIGNMENT

01-3 Prosperity Direction 1: Provide efficient and focused civic administration and governance. This report supports demonstration of accountability through service performance measurement and reporting.

02-2 Environment: The SEWPCC Upgrade and Expansion will reduce the environmental impact of our citizens on the Red River and the downstream lakes and rivers. It is in collaboration with the Regulatory Licence requirements issued by the Province of Manitoba.

## SUBMITTED BY

**Department:** Water and Waste  
**Division:** Engineering Services  
**Prepared by:** M Paetkau, P. Eng.  
**Date:** October 12, 2018  
**File No.** S-928

### Appendices

Appendix A – Key Project Facts  
Appendix B – Financial Forecast  
Appendix C – Key Project Events (History)

## Appendix A – Key Project Facts

<b>Appendix A – Key Project Facts</b>	
<b>Project Name</b>	Biosolids - Alternative Disposal Delivery and Management System
<b>Business Owner (Department)</b>	Water and Waste Department
<b>Project ID</b>	203110004B
<b>Project Sponsor</b>	Geoff Patton, P.Eng
<b>Department Responsible for Project Delivery</b>	Water and Waste Department
<b>Consultant Engineer (Company Name)</b>	Various
<b>Adopted Budget</b>	\$65M
<b>Class of Estimate (Adopted)</b>	Class 5
<b>Range of Estimate (Adopted)</b>	-50% to +100% \$32.5M - \$130M
<b>Amended Budget</b>	\$17M
<b>Class of Estimate (Amended)</b>	Class 4
<b>Range of Estimate (Amended)</b>	-30% to +60% \$11.9M - \$27.2M
<b><u>Project Scope</u></b>	
<p>The City has to implement a new biosolids management program as a result of the Water Protection Act. The City of Winnipeg has reviewed its land application practices of biosolids relative to regulation requirements, emerging requirements associated with nutrient management regulations, changes to quantity and quality from upgraded sewage treatment plants, and risk and criticality assessments done at all three plants.</p>	
<p>The current biosolids management program will need to be modified to satisfy the Regulation and will require significant capital investment and transition time to implement the required changes. A Biosolids Master Plan has identified potential options, costs, and timeframes to implement a new biosolids management program, which will comply with the Water Protection Act. Funds included are for engineering, design, and construction for the disposal of biosolids.</p>	
<b>Major Capital Projects Advisory Committee Membership:</b>	
<p>Doug McNeil, Chief Administrative Officer            Georges Chartier, Chief Asset and Project Management Officer            Moira Geer, Director of Water and Waste            Lucy Szkwarek, Manager of Finance and Administration, Water and Waste            Jackie Veilleux, Project Director Winnipeg Sewage Treatment Program            Dave Wardrop, Chief Transportation and Utilities Officer, CAO Office</p>	

## Appendix B – Financial Forecast

### Appendix B - Project Biosolids - Alternative Disposal Delivery and Management System Financial Forecast\* As at May 31, 2018

Project Component Deliverables	Budget (in 000's)			Actual Costs To May 31, 2018	Expenditure Forecast (in 000's)				Total Forecasted Costs	Surplus (Deficit) From Amended Budget	Variance Last Report	Change in Variance
	Adopted Budget	Council Approved Change <sup>1</sup>	Amended Budget		Projected Costs							
					2018	2019	2020	2021				
Engineering, Design and Other	\$ 13,000	\$ (7,816)	\$ 5,184	\$ 4,260	\$ 10				\$ 4,270	\$ 914	\$ 616	\$ 298
Construction	\$ 42,250	\$ (35,627)	\$ 6,623	\$ 6,297	\$ 465				\$ 6,762	\$ (139)	\$ -	\$ (139)
Pilot Biosolids Composting Operating Costs		\$ 1,952	\$ 1,952	\$ 1,713	\$ 500				\$ 2,213	\$ (261)	\$ (261)	\$ -
Contingency	\$ 9,953	\$ (6,808)	\$ 3,145	-	\$ 3,659				\$ 3,659	\$ (514)	\$ (355)	\$ (159)
<b>Total Project Budget</b>	<b>\$ 65,203</b>	<b>\$ (48,299)</b>	<b>\$ 16,904</b>	<b>\$ 12,270</b>	<b>\$ 4,634</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ 16,904</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>

  

% of Project Budget Spent (Actual Costs to Date / Adopted & Amended Budget)	73%	73%

\* Adopted and Amended budget and actual costs to date have been agreed to the City's general ledger and Monthly Capital Expenditures Report, actual cost variance equals spending from closed budget years. See below.

<sup>1</sup> \$48.229 million reduction part of the 2016 consolidation with the NEWPCC Nutrient Removal Upgrade Project, as part of the 2016 Capital Budget process.

Project ID	Project Year	Amended Budget	Costs to Date
Total Closed Project Budget <sup>2</sup>		\$4,940,745	\$4,940,745
203110004B	2012 - 2017	\$11,963,286	\$7,329,247
Total Project Budget		\$16,904,031	\$12,269,992

<sup>2</sup> Does not appear in the Capital Expenditures Monthly Report as the funds have been expended and it is designated as a closed Project ID.

## **Appendix C – Key Project Events (History)**

Biosolids are the treated sludge and solid residuals leftover from wastewater treatment. On June 16, 2011, the Water Protection Act (Act) was amended to include the following for the City's biosolids, which are generated at the North End Water Pollution Control Centre (NEWPCC):

- Nutrients must be recovered and recycled to the maximum extent possible through application of the best available technologies.
- Biosolids and wastewater sludge remaining after the treatment process must be reused.

On October 2, 2012, Manitoba Conservation and Water Stewardship sent a letter to the City requiring that a Biosolids Master Plan that considered opportunities to recycle nutrients and beneficially reuse biosolids, be submitted by October 2, 2014. The City's current practice, landfilling, is not considered beneficial reuse.

On September 30, 2014, the Winnipeg Sewage Treatment Program (WSTP) submitted the City of Winnipeg Biosolids Master Plan. The plan focuses on nutrient recovery and reuse by focusing on disposal options that utilize nitrogen and phosphorous contained within the biosolids. These options include land application, soil manufacturing, and land reclamation. A new sludge digestion facility with nutrient recovery will produce a low-pathogen biosolids product. Construction of the new facility is part of the NEWPCC Biological Nutrient Removal Upgrade.

The plan also proposed interim strategies for beneficial biosolids reuse before the new digestion facility is completed. The interim strategies are a biosolids composting pilot with landfill reclamation and seasonal land application.

The Biosolids Master Plan was approved by the Regulator on March 10, 2016.

The following contracts are complete and now closed:

### **89-2014 Professional Consulting Services for RFP Development and Recommendation for a Struvite Vendor**

- Professional consulting services to procure a phosphorous recovery system.
- Completed.

### **92-2014 Supply of Woodchips**

- Supply of woodchips for biosolids composting pilot.
- Completed.

### **92-2014 Extension 1**

- Annual renewal as part of a multi-year contract for the supply of woodchips for the biosolids pilot composting operation.
- Completed.

## **92-2014 Extension 2**

- Annual renewal as part of a multi-year contract for the supply of woodchips for the biosolids pilot composting operation.
- Completed.